

In the Specification:

Please replace the paragraph beginning on page 7, line 8, with the following amended paragraph:

Downstream of the valve 22 is a pump 24, which is in fluid communication with the valve 22 and the tank 12. While a variety of pumps are contemplated for use with the present system, including, but not limited to gear pumps, piston pumps, diaphragm pumps, and progressive cavity pumps, the preferred type of pump in the system 10 is a positive displacement pump, specifically a peristaltic pump, and particularly a high-pressure type using a lubricating bath of glycerin to the internal stator hose. A variable speed DC motor (not shown) supplies power to the pump. Although it emits a pulsating output flow, the moving parts of the peristaltic pump do not become exposed to the settable slurry. A suitable commercial example of a preferred type of pump is the DL Series of pumps manufactured by PCM POMPES, 17 rue Ernest Laval - BP 35, 972173 Vanves Cedex, France. The preferred pump 24 has a minimum flow rate of 84 tons/hr, a maximum flow rate of ~~20 m<sup>3</sup>/hr~~ m<sup>3</sup>/hr and a speed of between 5 to 133 rpm. In the preferred embodiment, an outlet 25 of the pump is configured as a quick connect fitting which is easily disconnected and allows the connection of a garden hose into the system for flushing purposes. Another suitable pump is a progressive cavity positive displacement pump manufactured by Moyno Products, Fluids Handling Division, Robbins & Meyers, Inc., Springfield OH. It has been found that the combination of the tank 12 with the open top 13, and the positive displacement

pump 24 provided with a dampener as described below has resulted in a generally uniform flow rate of plaster slurry.

Please replace the paragraph beginning on page 9, line 5, with the following amended paragraph:

Another main component of the system 10 is a pressurized accelerant holding tank 44 into which is inserted a supply of accelerant for accelerating or hastening the setting time of the gypsum plaster slurry. Although a variety of known accelerants are contemplated, a preferred accelerant in the present system 10 is liquid aluminum sulfate and water. For other accelerants, see copending application U.S. Serial No. 09/502,609 for Efficient Catalyst for the Set Acceleration of Spray Applied Plaster, now U.S. Patent No. 6,355,099 which is incorporated by reference herein. Also, depending on the application of the system 10, other adjuvants beside accelerant, including but not limited to retarders, strength enhancers, fillers, starch, hardeners, setting agents, binders, dispersants, etc. can be introduced into the flow of the main liquid, in this case a slurry.

Please replace the paragraph beginning on page 14, line 1, with the following amended paragraph:

The accelerator is vaporized into the stream of compressed air, after which it is carried through a reinforced hose to the spray gun 40 entering at point 124 (FIG. 3). This alternative construction is considered substantially equivalent to the preferred system

described above, and is preferred when using viscous accelerants. Yet another alternative is to introduce a relatively viscous accelerant, such as described in commonly assigned, co-pending U.S. Patent Application Serial No. 09/502,609 entitled Efficient Catalyst for the Set Acceleration of Spray Applied Plaster, now U.S. Patent No. 6,355,099 and incorporated by reference, through a mechanical pump, such as a piston, diaphragm or other type of metering pump directly to the spray gun 40 at point 64. It is also contemplated that, when slurries of other constituents, such as Portland cement or magnesium phosphate products, it could be introduced at the first air supply inlet 58.

Please replace the paragraph beginning on page 14, line 24, with the following amended paragraph:

The trigger valve 78 is provided on the handle 100 of the spray gun 40 and is placed in fluid communication with the pneumatic control manifold 50 (best seen in FIG. 2). In the preferred embodiment, the trigger valve 78 is a plunger or piston type known in the art, and a suitable model is No. G300-001 produced by E.S. Manufacturing of St. Petersburg, FL. The trigger valve 78 has a knurled outer boss 138 integrally affixed to a threaded nipple portion 140 which threadably engages a threaded bore (not shown) in the handle 100. An O-ring 142 maintains an air seal at that connection. A main body 144 of the valve 138 defines an axial chamber (not shown) in which reciprocates a poppet 146. An outer end 148 of the poppet 146 serves as the trigger which is actuated by the operator. In combination with the O-ring 142, a relatively smaller O-ring 150 on the main body 144 isolates the outlet 76. Two

additional O-rings 154 on the poppet 146 pneumatically isolate the poppet. In a normally closed position, air pressure from the compressor 38 forces a small end 156 of the ~~poppet~~ poppet 146 against the valve body 144 where it is pneumatically sealed by the adjacent small O-ring 154.

Please replace the paragraph beginning on page 15, line 17, with the following amended paragraph:

Referring to FIG. 3, if desired, the system 10 may be equipped with the chopper attachment or chopper gun 82 for introducing chopped fiberglass roving fibers into the slurry stream. The incorporation of such fibers is intended to increase the strength of the set plaster. Such attachments are known in the art, and are pneumatically operated. In the system 10, the chopper attachment ~~82-is~~ 82 is preferably mounted to the chopper bracket 102, and is connected to the pneumatic control box 48 so that it is operated by the pilot valve 80. Once mounted, the chopped fiberglass fibers are combined with the slurry externally of the passageway 104 as is known in the art.

Please replace the paragraph beginning on page 15, line 26, with the following amended paragraph:

Referring now to Table 1, a list of actual system performance parameters is provided, along with physical slurry data. The plaster mixture entry is a mixture of calcium sulfate hemihydrate, an internal binder which is preferably a free flowing, water

redispersable polymer powder such as polyethylene glycol and an adhesive binder. A more detailed disclosure of the plaster mixture is found in copending application U.S. Serial No. 09/502,740, now U.S. Patent No. 6,379,458 for Machinable Plaster Composition, which is incorporated by reference herein.

Please replace the paragraph beginning on page 18, line 5, with the following amended paragraph:

In operation, a supply of slurry is provided to the mixing tank 12 and stirred by the impeller 16. When the operator wants to initiate slurry and accelerator flow, the trigger 148 is depressed axially against the system pressure, placing the air flow to the trigger valve 138 in communication with the outlet 152. The outlet 152 is then in fluid communication with the manifold 50, and will operate the various pinch ~~valves~~ valves to commence the flow of slurry through the pump 24, the dampener 26 and to the spray gun. Simultaneously, compressed air is fed from the compressor 38 to the halo fitting 58, to the accelerator holding tank 44, and to the gun inlet 124 for blending with the accelerant.

Please replace the paragraph beginning on page 18, line 14, with the following amended paragraph:

Thus, the slurry is first mixed with a preatomizing air at the halo fitting 58 to initially increase flowability. Next, the vaporized accelerant is blended into a second source of compressed air prior to ejection or emission as a blended gas into the slurry. In the

preferred embodiment, this blended gas is introduced into the slurry at the nozzle 112. In this manner, the accelerant is more evenly distributed in the slurry, and spray gun clogging is prevented. The present system 10 also features the use of the dampener 26 with the positive displacement peristaltic pump 24 to provide a relatively uniform flow of slurry. The open-topped tank 12 also provides an atmospheric pressure environment for slurry mixing and loading, which further facilitates relatively uniform flow rates. Upon completion of the spraying process, the tank 12 can be filled with ~~water and~~ water that is flushed through the system 10.

Please replace the paragraph beginning on page 19, line 11, with the following amended paragraph:

Referring now to FIG. 6, an alternate system for providing gypsum slurry is generally designated 170. Shared components of systems 10 and 170 are designated with identical reference numbers. A main distinction between the systems 10 and 170 is that in the system 170, the mixing tank 12 is supplemented with a high shear mixing tank 172 provided with a high shear mixer assembly including a motor 174 and an impeller 176. Slurry constituents including ~~water and alfa-~~ and alpha or beta calcium sulfate hemihydrate are fed into the high shear mixing tank 172 and are mixed to form a slurry prior to dispensing the slurry through an outlet 178. A valve 180 is positioned on the outlet 178 to control the flow from the tank 172. The outlet 178 communicates with the mixing and storage tank 12, which now serves the role as a "day" tank. This arrangement allows the day tank 12 to be

refilled during the day with slurry of a given composition so that production is not interrupted for reformulating new batches of slurry.